

Furnace Run Watershed Plan

Balancing Growth and Watershed Stewardship
2011



FURNACE RUN WATERSHED PLANNING PARTNERSHIP

Mayor Michael Lyons,
Chairman

Richfield Township

Lynne Woodman
Holly Glock
David Wyatt

Village of Richfield

Harold Scobie
Kevin Ahlborg
John Szabo
Bobbie Beshara
Matthew A. Kearney
Timothy M. Krall
Ralph Waszak

City of Brecksville

Ron Weidig
James White

Bath Township

Jack Bonsky
Tohn Troike
Darrin Kert
Jeff Lukity

City of Broadview Heights

Eugene Esser
Richard Goodell
George Stelmaschuck
Robert Boldt
Thomas Pavlica

Boston Township

Amy Anderson
Jerry Ritch
Tim Tesmer

City of Cuyahoga Falls

Gary Whidden
Andrea Irland
Anthony Demasi

Cuyahoga Valley National Park

Kevin Skerl
Lisa Petit

Metroparks Serving Summit County

Mike Johnson

Acknowledgements

This watershed plan was developed by the Cuyahoga River Community Planning Organization (CRCPO) in cooperation with the Furnace Run Watershed Planning Partnership.

ABOUT THE FURNACE RUN WATERSHED PLANNING PARTNERSHIP

The members of the Furnace Run Watershed Planning Partnership are appointed by the mayors of the watershed communities and are assisted in the planning process by agencies and institutions working toward watershed stewardship.

ABOUT THE CUYAHOGA RIVER COMMUNITY PLANNING ORGANIZATION (CRCPO)

The CRCPO is the nonprofit organization that manages the Cuyahoga River Remedial Action Plan (RAP) and the Cuyahoga American Heritage River Initiative, and works to support restoration efforts and long term community stewardship of the Cuyahoga River Watershed and Area of Concern.



Additional support for the work of the
Furnace Run Watershed Partners comes from:
Kelvin Rogers, OhioEPA



Furnace Run

Ohio Balanced Growth Program

Watershed Plan

2011

The Furnace Run Balanced Growth Initiative is a community-driven land suitability plan that will assist communities in balancing economic growth with conservation of critical and valuable natural resources in the Furnace Run Watershed.

The goals of the Plan are to

- Preserve, restore and enhance existing watershed features
- Promote development and redevelopment that balance economic growth and watershed function
- Recommend land use practices that best avoid or minimize impacts on the watershed and stream resulting from development

Furnace Run is one of the healthiest and most-intact streams in the Cuyahoga River watershed. Major portions of the watershed are within Metroparks Serving Summit County and the National Park Service, affording it a higher-than-average level of attention and stewardship.

Urbanization that has taken place in the upper watershed is in the form of large-lot residential development where extensive stream systems are largely protected for the value they add to properties. Commercial development comes primarily in proximity to major freeway interchanges and major roads. Farmland remains, and the watershed communities have, for the most part, avoided the kind of commercial sprawl that would threaten the Run.

However, Furnace Run is only in partial attainment for aquatic life, and significant bank erosion is occurring in the lower Run where excessive siltation covers the stream bottom. Addressing watershed protection, and planning now for future stresses, offer opportunities for stewardship that will be necessary for long-term watershed health.

The watershed communities have taken this opportunity to look at their watershed in terms of its natural elements and their functions, and to base future land use planning on scientific analyses of where development and conservation will most effectively protect these resources.

This Plan presents input from community representatives, and the data and portrait of the watershed they used when identifying Priority Conservation Areas, Priority Development Areas and Priority Agricultural Areas. It also contains detailed data on wetlands and selected sites, as well as lists of the tools and strategies the partners will use to implement the plan.


Building and strengthening stewardship, and supporting land use planning for watershed health in the river's tributaries, are essential parts of the Cuyahoga River Remedial Action Plan for delisting beneficial use impairments in the Cuyahoga River. The Cuyahoga River Community Planning Organization is working with local governments, Metroparks Serving Summit County, the Cuyahoga Valley National Park and other partners to support stewardship in Furnace Run.

Contents

Executive Summary	<i>i - xvii</i>
Introduction	
Balanced Growth Program	2
Goals & Project Scope	3
Watersheds	4
The Cuyahoga River Watershed	5
Furnace Run Watershed Characteristics.....	6
Watershed Planning and Management	12
Community Issues.....	14
Critical Watershed Features in the Furnace Run Watershed	15
Identifying PCAs, PDA/PRAs & PAAs	26
Designated Priority Areas.....	31
Plan Implementation.....	89
Action Steps and Timetable.....	91
Tools for Watershed Stewardship.....	92

APPENDICES

- A. Draft & Resolutions of Adoption
- B. Assessing Wetlands for Restoration Potential
- C. Ohio Lake Erie Commission Balanced Growth Program
- D. Related Studies, Data and Reports



This project was funded in part through the Lake Erie Protection Fund which is administered at no cost to the Fund by the Ohio Lake Erie Commission. The LEPF is supported through the voluntary contribution of Ohioans who purchase the *Erie...Our Great Lake* license plate featuring the Marblehead Lighthouse.

© 2011 Cuyahoga River Community Planning Organization.

CRCPO • 1299 Superior Ave. • Cleveland, OH 44114 • 216.241.2414

Furnace Run

Ohio Balanced Growth Program

2011

Executive Summary

Furnace Run is a tributary watershed of the Cuyahoga River in Northeast Ohio, an area of steep terrain and deep wooded ravines that has retained much of its rural atmosphere despite being in the direct line of outward migration from Cleveland's and Akron's metropolitan areas. This, in spite of the fact that the land is traversed by three interstate highways, one of which is the Ohio Turnpike, and two major interchanges, and is immediately adjacent to vast areas of popular and highly-visited parklands.

Nearly a third – 31.8% – of the watershed is parkland, encompassing most of the land in the eastern half of the watershed and all of the final 20% of the land before the stream joins the Cuyahoga where Cuyahoga Falls and Boston Township meet. All but the outer edges of the watershed, whether or not they are under the protection of either Metroparks Serving Summit County, the Cuyahoga Valley National Park or the Cleveland Metroparks, are riddled with steep slopes that make exurban-style development challenging except in areas already in use for agricultural purposes.

The potential for imbalance between development and conservation looms large, as does the challenge of providing local revenue when so much land needs to be protected.

The Furnace Run communities have a history of promoting regional collaboration and cooperation. With approval from 75% of the watershed land area (the number of communities and share of the population required in order to receive State of Ohio endorsement,) such collaboration is imperative.

The Partnership was formally organized for the purpose of participating in the development of the BGI Watershed Management Plan. The communities are currently active in watershed stewardship and embrace shared goals for the watershed. Brecksville and Broadview Heights were both active supporters and participants in the Chippewa Creek Balanced Growth Watershed Management Plan. Mayor Mike Lyons of the Village of Richfield serves on the CRCPO Board, has been an active leader in a number of regional collaboration initiatives, and has led this Partnership in its effort to protect and preserve key elements of Furnace Run.

After reviewing updated maps of critical watershed features, studying existing land uses, the group worked to identify the criteria they would use to define what areas of the watershed would be classified as high priority areas for either conservation, development or agricultural use. Based on those criteria, the group identified a total of 21 Priority Conservation Areas, 11 Priority Development Areas and 3 Priority Agricultural Areas.

Each Area was measured, evaluated and analyzed to identify the appropriate tools and strategies to reach the group's goals for the site.

On completion of the Plan and its presentation to the watershed communities for their adoption, CRCPO will continue to provide support to the Partnership as each community moves toward implementing the strategies.

Furnace Run is a primary contributor of sediment to the Cuyahoga River, making erosion and soil stabilization a major concern for watershed communities.

Executive Summary

Furnace Run

The Furnace Run watershed drains approximately 20.34 square miles of predominantly suburban lands. 2002 satellite land cover analysis determined that approximately 14% of the watershed is considered urbanized with generally impervious surfaces. The remaining 86% of the watershed is comprised primarily of wooded (47%), grass/agricultural (34%) and shrub/scrub (7%) land cover (Cuyahoga River RAP-2002)



MAJOR ISSUES IN THE FURNACE RUN WATERSHED

- 1) Steep, fast draining, high-energy stream with limited potential for storm water storage in which upstream and headwater urbanization adds discharge volume and energy.
- 2) The stream is the top sediment producer to the Cuyahoga River, where erosion and sediment are negatively impacting park resources. TMDL cites sediment and nutrients as leading stressors to the Cuyahoga River.
- 3) Community goals to preserve rural / small town atmosphere and preserve or enhance vital greenspace in riparian corridors while also promoting quality economic development.
- 4) Highly desirable communities of the watershed are under steady development pressure, especially in headwater and upstream locations near highway interchanges.
- 5) Close proximity to highway network and mid-location between Akron and Cleveland provide market opportunities for office parks and related infrastructure.
- 6) Underused and newly vacant employment centers provide excellent opportunities for Priority Re-development Areas and exploration of State economic development incentives with respect for the watershed.

Special Park Features

Furnace Run Metro Park, totaling 870 acres on seven tracts located in Richfield Township and Richfield Village, is operated by Metroparks Serving Summit County. The tracts are fragmented east-west by Interstate 77, State Route (SR) 21, and Brecksville Road, and north-south by Brush Road and State Route 303; however, two of the southernmost tracts, approximating 43 acres along Wheatley Road, are disjoined from the remainder of the park and ecologically separated by Interstate 271.

The Cuyahoga Valley National Park (CVNP,) which contains 30,000 acres of wetland and forest along the Cuyahoga River from Akron to Cleveland, also has property within the Furnace Run Watershed. Furnace Run Metro Park is adjacent to Cuyahoga Valley National Park. Because of the enormous appeal of these parks there is increasing pressure on the watershed and downstream park assets resulting from adjacent urbanization.

The Cleveland Metroparks system has recently taken over management of the property that contains the northernmost section of the watershed, where they intend to naturalize 500 acres in and around a golf course.



Furnace Run enters the Cuyahoga River at mile 33.08, in the Cuyahoga Valley National Park.

Drainage area: 20.34 Sq miles

Hydrologic Unit Code:

HUC-14 04110002-040-050

Main stem Length: 10.4 miles

Gradient: from 1252 ft to 69 ft, dropping 561 feet: average fall of 54 feet per mile.

Water quality: meets OEPA water quality standards, but threatened.

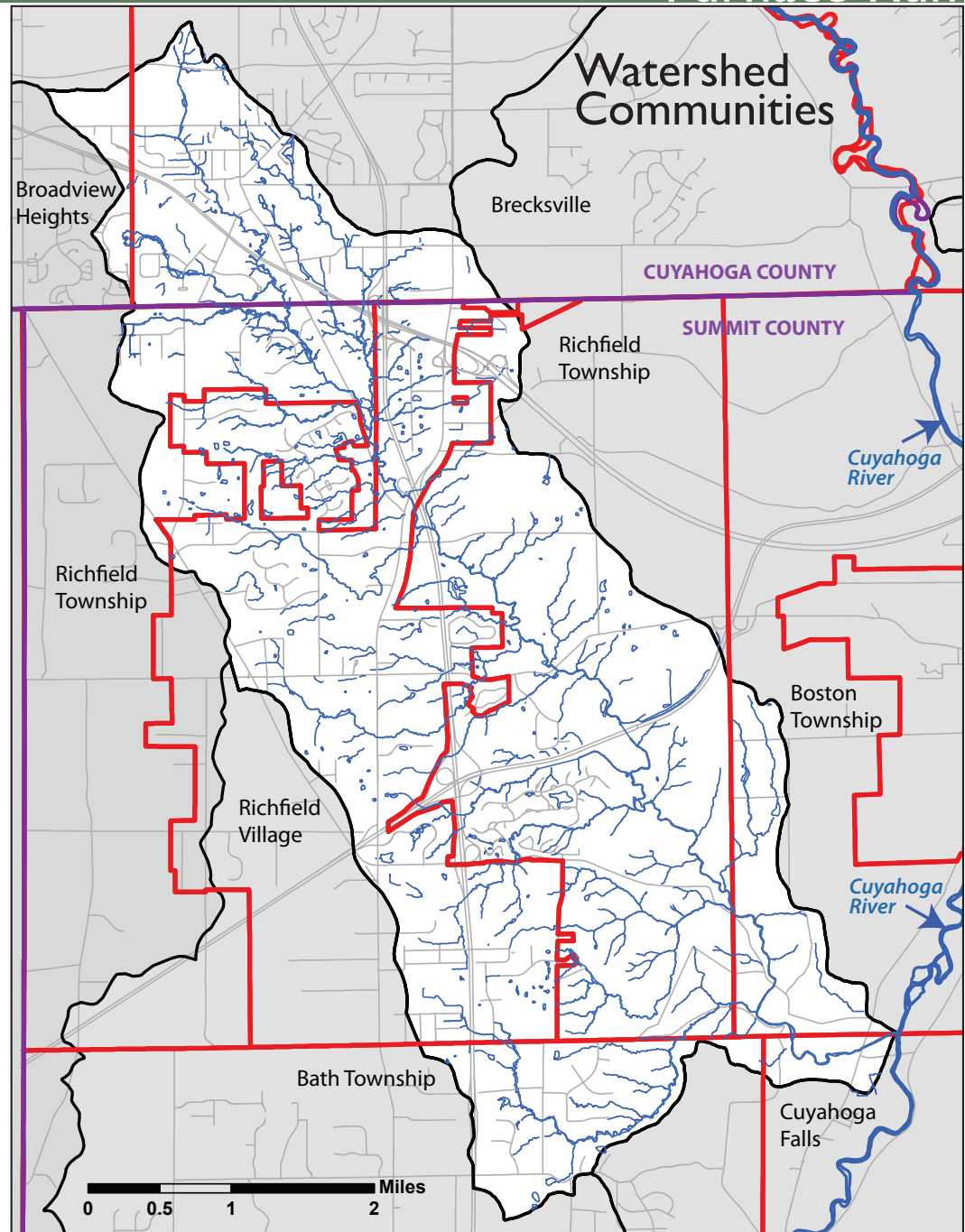
See pp. 6 - 8 of Plan

Furnace Run Watershed Plan

Furnace Run

Furnace Run originates in Brecksville, Broadview Heights and Richfield Village and Township in southern Cuyahoga and northern Summit counties in northeast Ohio.

Flowing approximately 10.4 miles southeast through Richfield, Bath and Boston Townships, it joins the Cuyahoga River at river mile (RM) 33.08 in the Cuyahoga Valley National Park.

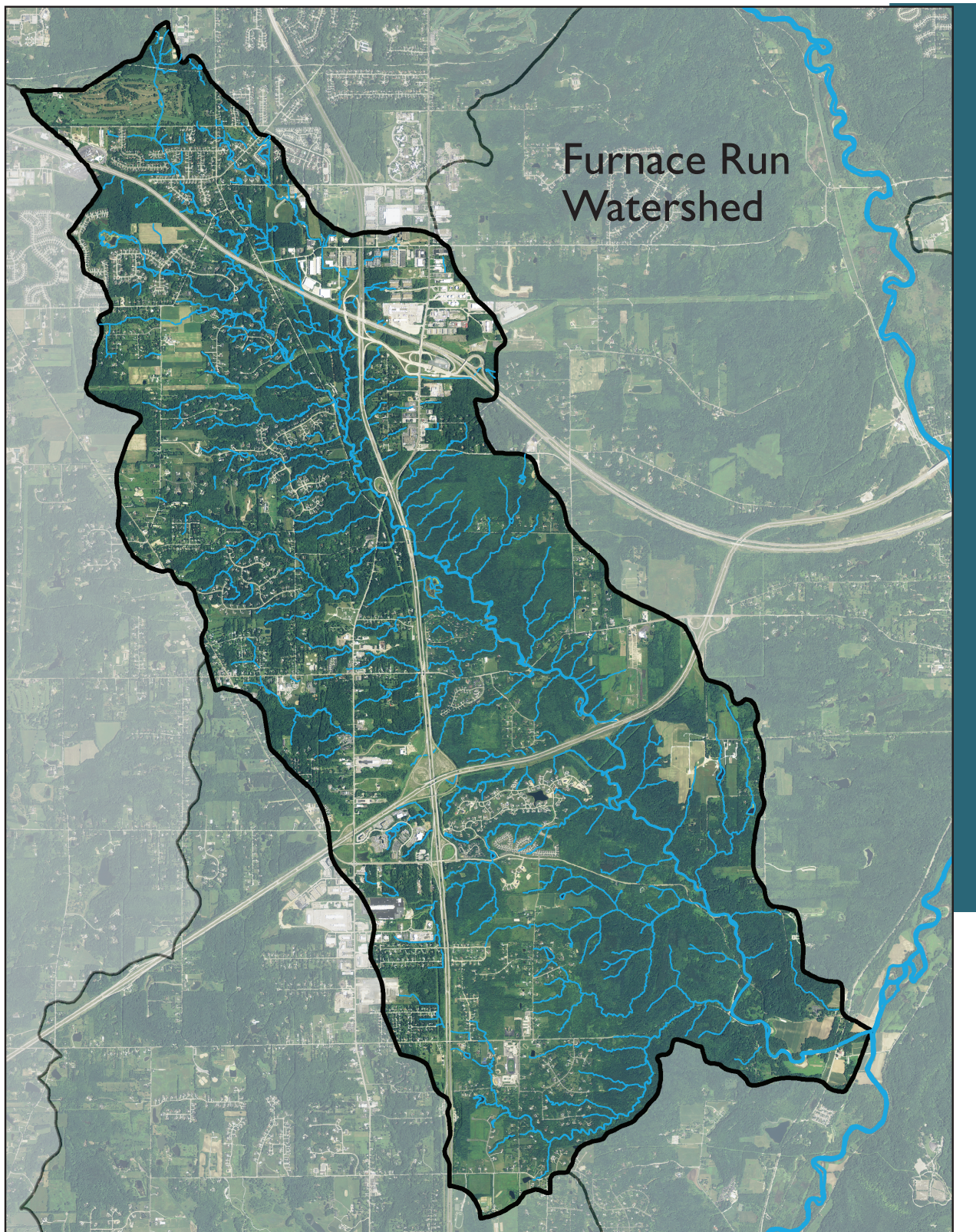


Communities in the Furnace Run Watershed	Municipal Composition (% of Watershed)	Population in Watershed (2008)
Richfield Township	45.4	2,880
Village of Richfield	25.3	2,104
City of Brecksville	13.1	1,828
Bath Township	7.1	626
Boston Township	6.0	88
City of Broadview Heights	1.7	405
City of Cuyahoga Falls	1.4	552
Total	100	8,483

* The parts of Boston Township and Cuyahoga Falls in the Furnace Run watershed lie wholly within the Cuyahoga Valley National Park.

Executive Summary

Furnace Run Watershed



Developing the Plan

See pp. 2, 3, 12, 14, 15 - 29 of Plan

The process for developing the Furnace Run Balanced Growth Plan began with the organizing of the Furnace Run Watershed Planning Partnership, representatives and residents of seven local governments and two park districts.

Once organized, the partners met regularly to complete the following tasks:

1. identify and evaluate community issues and desires
2. GIS data analysis & qualitative assessment of Furnace Run's natural features to reflect community needs & watershed function
3. identify Criteria for prioritizing priority conservation, development and agricultural areas
4. identify and analyze potential Priority Conservation Areas (PCAs)
5. identify and analyze potential Priority Development / Redevelopment Areas (PDAs)
6. identify and analyze potential Priority Agricultural Areas (PAAs)
7. identify and analyze undeveloped land for designation as PCA, PDA/PRA, PAA.
8. Review community ordinances, identify tools, practices & strategies for community stewardship, and prioritize action items.

DEVELOPING EVALUATION CRITERIA for Priority Conservation, Agricultural and Development Areas

See pp. 30 - 33, 76 - 77, 82 - 83 of Plan

Identifying Priority Conservation Areas (PCAs,) Priority Development Areas (PDAs,) and Priority Agricultural Areas (PAAs) began with identifying community needs.

Over the course of numerous Watershed Planning Partnership meetings we solicited feedback from the partners to help shape the evaluation criteria for identifying priority areas. Each community representative received a scoring priority worksheet titled "Scoring Priorities for Conservation of Important Watershed Features". The worksheet listed watershed features and their associated functions, and each person was asked to rank the importance of each item.

The survey determined which factors mattered most to the communities. The top scoring watershed features and issues were used to identify areas of the watershed that should be pursued for conservation and, conversely, areas without these characteristics should be more suitable for development. Additional consideration was made for certain sites currently and potentially used for agricultural, which has become a significant land use in the area.



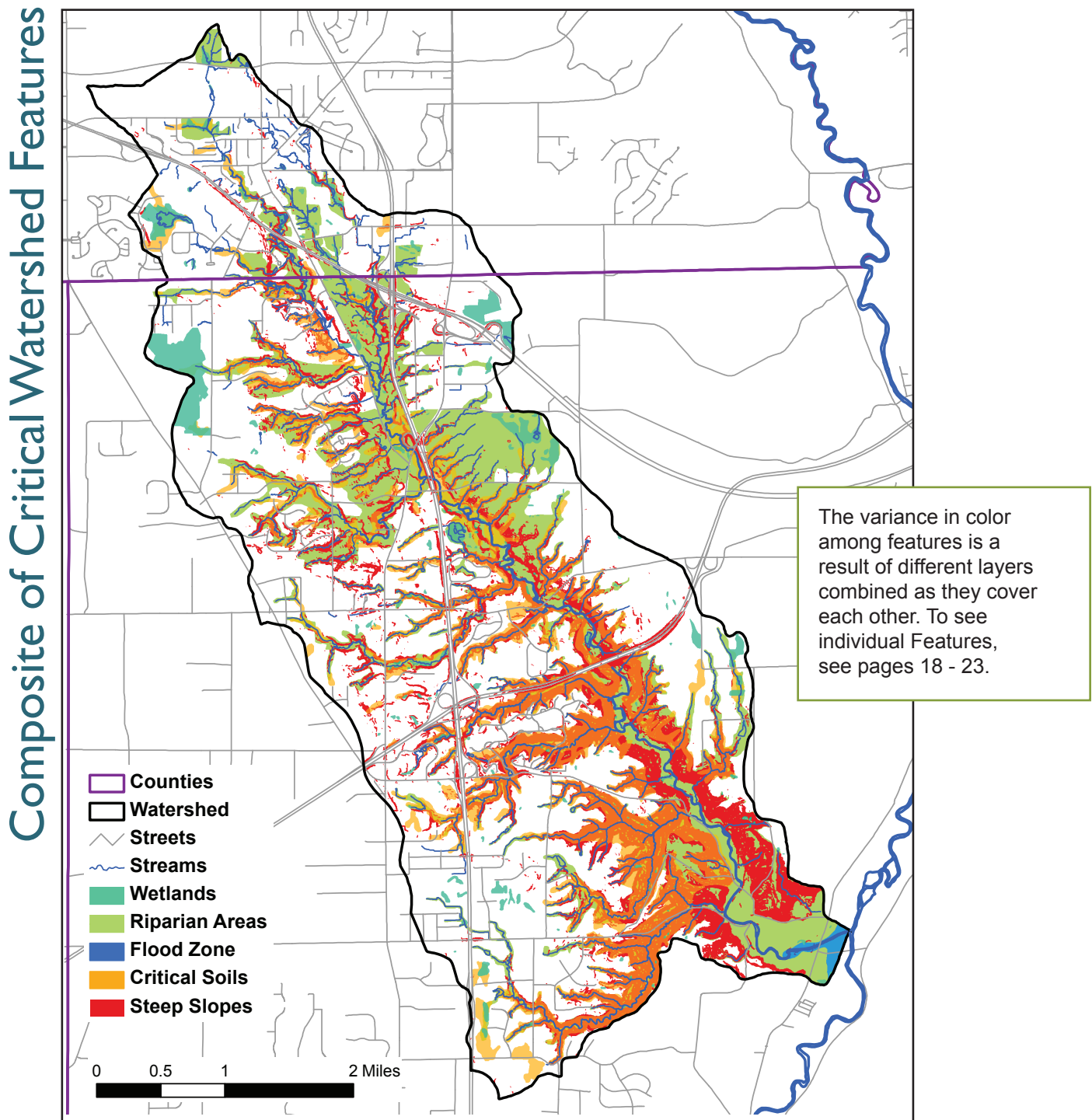
Executive Summary

Furnace Run

The natural features that are the focus of study when addressing how effectively the watershed functions include: soils • slopes • streams • riparian areas • flood plains • wetlands • forests.

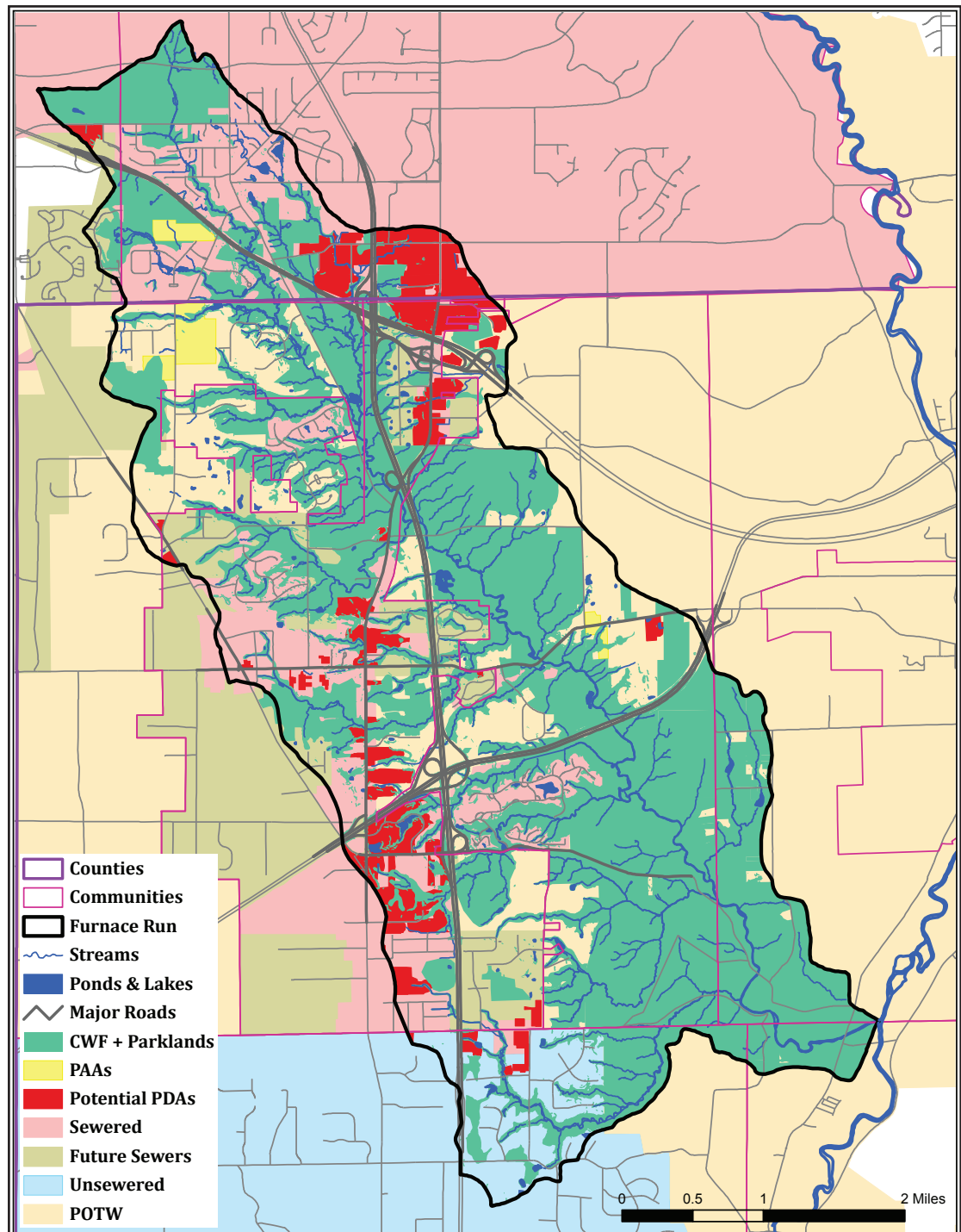
Each feature was mapped individually to show where that feature appeared in the watershed. The maps were layered to create a master map showing all critical features. The partners agreed that all area containing any number of critical features would be named “critical feature areas” regardless of the number of features contained in the area.

This map displays the critical watershed features “layered-up”. It represents the most important functional elements of the watershed which need to be preserved or restored to assure stream functionality.



In order to determine areas to study for their potential to offer development opportunities, the elements analyzed include the Critical Watershed Features previously mentioned, plus: existing impervious surfaces • sewer lines • major intersections and existing commercial development.

This map displays such features, as well as all Critical Watershed Features, Priority Agricultural Areas, parklands and streams. This allows the partners to identify areas that could avoid negatively affecting important conservation areas while focusing on areas offering services and infrastructure for development or redevelopment.



Determining Potential Areas for Development

Executive Summary

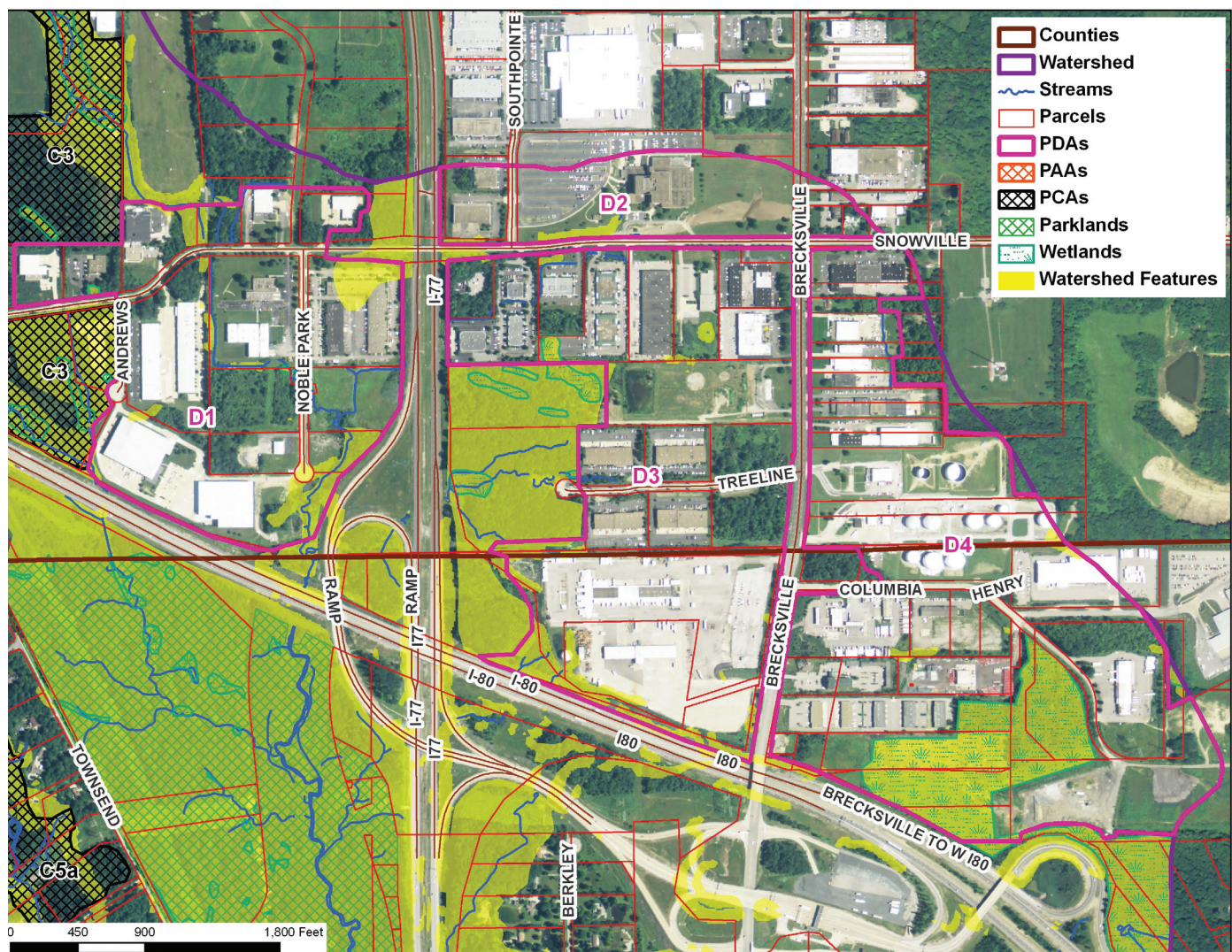
Furnace Run

The Partnership's field trip to visit several of the potential priority areas, along with analysis of Critical Watershed Features and mapping of existing built infrastructure, offered both a context for decision-making and an opportunity for partners to consider planning strategies and tools for conservation, restoration, development and redevelopment.

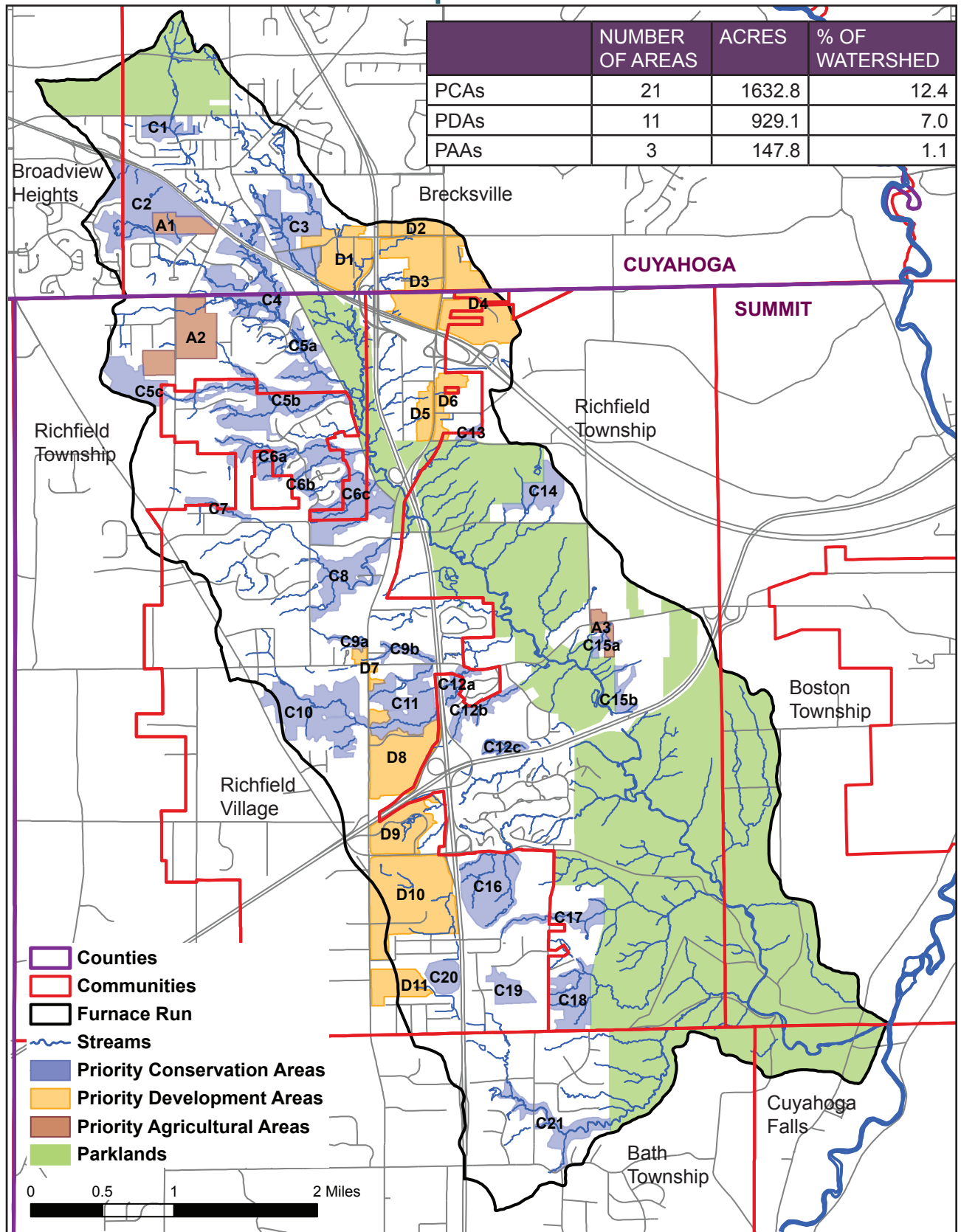
The tour also allowed a ground level appreciation of the geographic relationships among the variously-designated areas – not only where clusters of like parcels were located, but also how various uses could work to support one another.

The map on the opposite page shows the placement of all PCAs, PDAs, and PAAs as well as protected parkland, to offer an overview of how various land uses fit within the watershed,

The photo below shows an example of sites where Priority Conservation Areas and Priority Development Areas exist in close proximity, and where watershed features, highlighted in yellow, may exist within PDAs but would remain undeveloped.



Composite • PDAs, PCAs, PAAs



Executive Summary

Furnace Run

PCA

Priority Conservation Areas

Priority conservation areas are locations where land use change is predicted to have a high impact on the watershed in terms of flooding, erosion, and water quality, based on the analysis of several data sets representing criteria that the watershed planning partners determined were important.

• CRITICAL SOILS

Recommendation: In critical soil areas, communities should develop soil compaction limitations to help conserve this resource during construction. Conservation and low impact design standards are recommended.

• STEEP SLOPES

Recommendation: In steep slope areas, communities should conserve these resources to the maximum extent possible for health, safety, property and environmental concerns. Setbacks should be implemented on slopes of 12% or more.

• STREAMS & NATURAL RIPARIAN AREAS

Recommendation: Stream and riparian corridor areas should be protected from encroachment at all costs. Communities should adopt riparian setback ordinances to protect both headwater and primary headwater streams. Where impacts occur in these areas, mitigation within the immediate drainage area should be required.

• FLOODPLAINS

Recommendation: Communities should conserve floodplains to accommodate excess flow and to protect health and property. Community regulations need to maintain current floodplain maps and adequately protect floodplains from development to reduce future damages.

• WETLANDS

Recommendation: Wetland areas should be conserved as essential storage and filtration systems. Communities should adopt ample setback ordinances for all wetlands categories.

• FORESTS

Recommendation: Communities should conserve forested areas within riparian corridors and minimize the loss of existing forested areas throughout the entire watershed, through conservation development and tree preservation regulations.

COMMUNITY PRIORITIES for CONSERVATION in the FURNACE RUN WATERSHED

Listed in order of preference

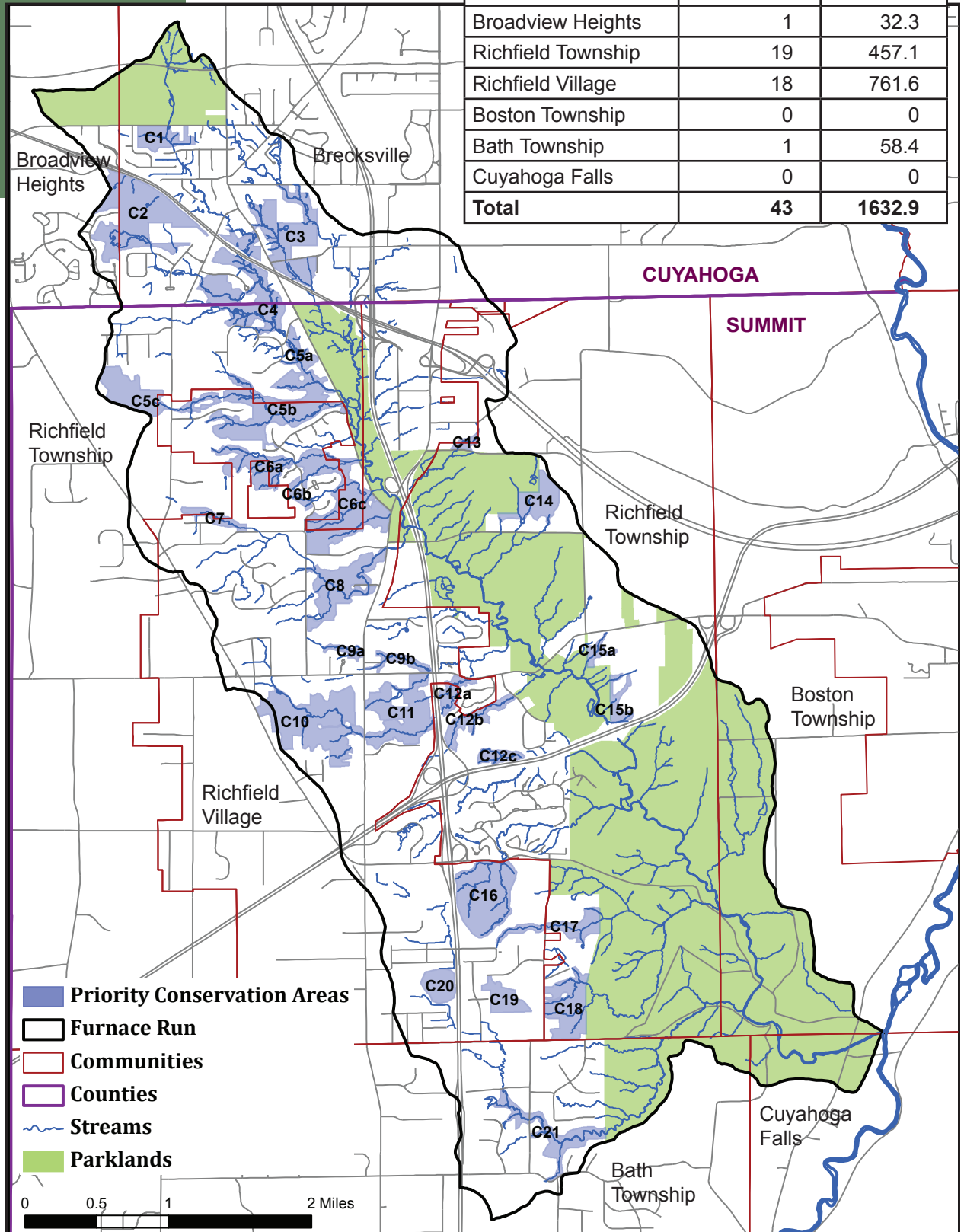
1	Stream banks and adjacent vegetated corridors for erosion prevention
2	Steep slopes for erosion protection
3	Forest corridors for flow and bank stability purposes
4	Floodplains for flood water management purposes
5	Soils which are highly erosive and fragile
6	Small streams and Primary Headwater areas for flow management
7	Soils that support wetlands
8	Soils that allow high infiltration for storm water
9	Wetlands for flood water management
10	Areas in imminent danger of property damage or loss from flooding or erosion
11	Forest areas which provide significant habitat and connections
12	Wetlands for water quality and filtering
13	Stream banks and adjacent vegetated corridors for habitat benefit

See pp. 30 - 75 of Plan

Furnace Run Watershed Plan

Priority Conservation Areas

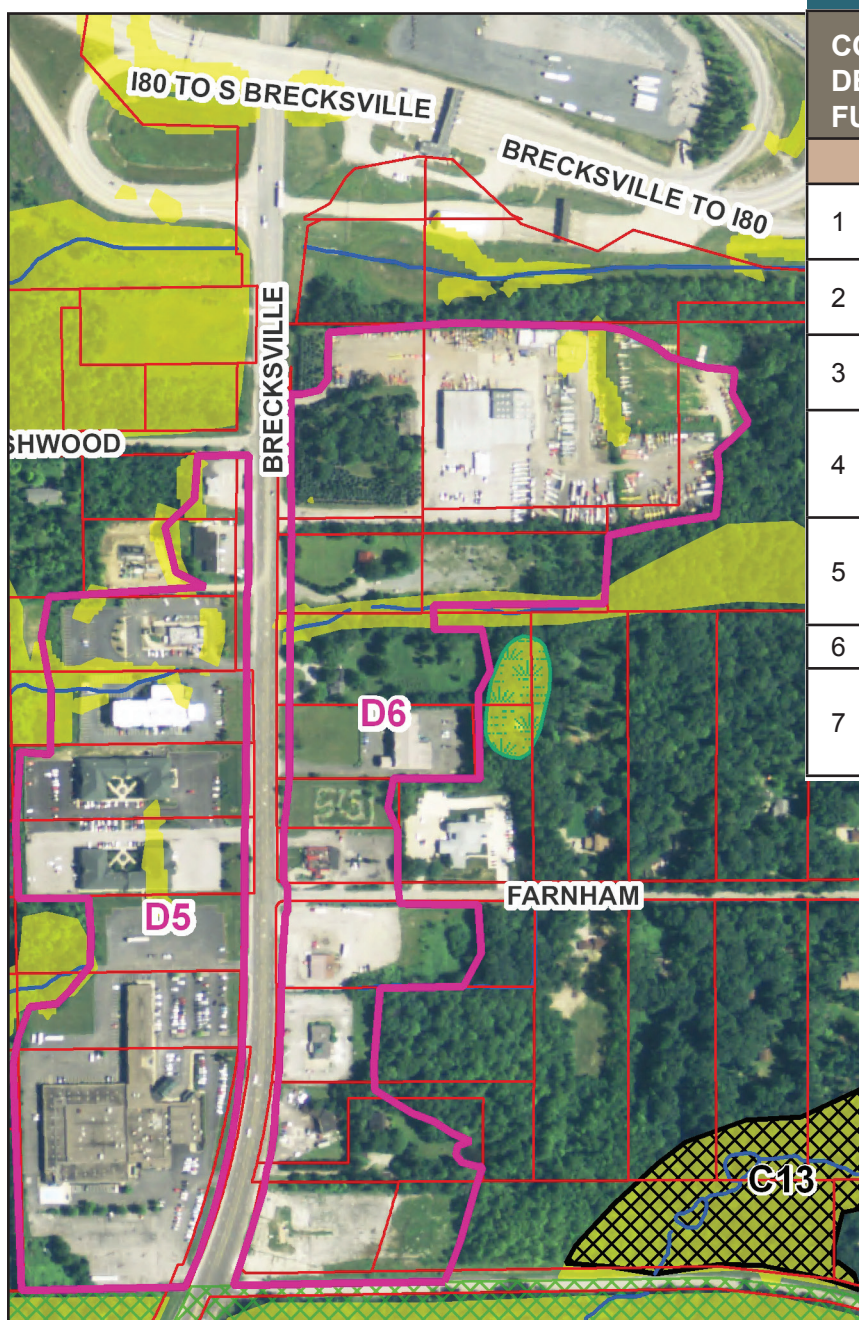
COMMUNITY	# OF PCAs	ACRES
Brecksville	4	323.5
Broadview Heights	1	32.3
Richfield Township	19	457.1
Richfield Village	18	761.6
Boston Township	0	0
Bath Township	1	58.4
Cuyahoga Falls	0	0
Total	43	1632.9



Priority Development and Redevelopment Areas

Priority development areas are locations where conditions suggest that additional development would be appropriate and where land use changes are predicted to have minimal impact on the watershed.

Criteria for determining Priority Development Areas in the Furnace Run watershed seek to promote the siting of new employment-producing development in existing urbanized areas as infill or redevelopment of underused sites.



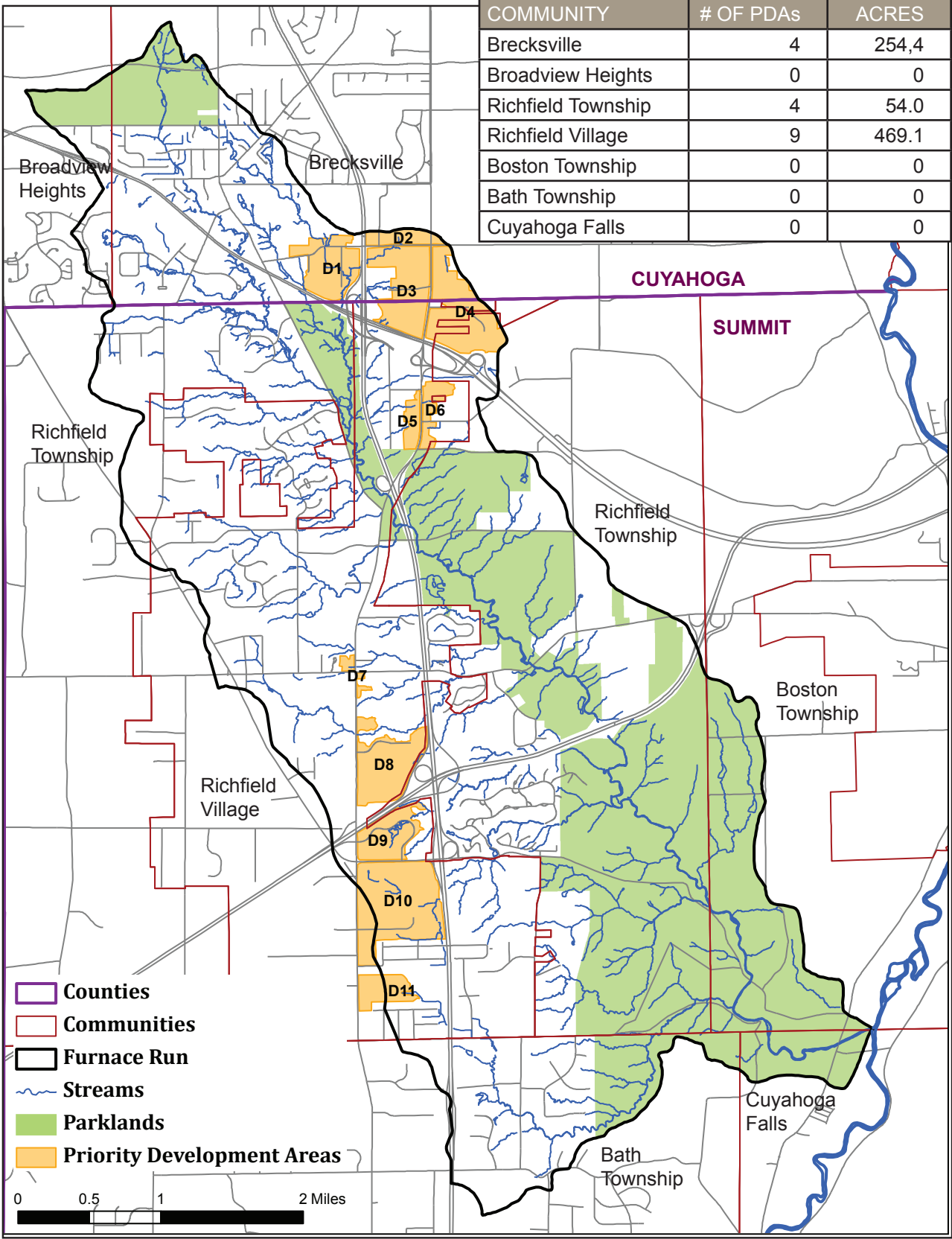
COMMUNITY PRIORITIES for DEVELOPMENT in the FURNACE RUN WATERSHED

	Listed in order of preference
1	Land areas with adequate existing utility services: Electric/Gas/Water/Sewer
2	Existing development areas that can be redeveloped
3	Land areas already characterized by urbanization
4	Larger tracts (e.g. greater than four acres) capable of optimizing low impact development features
5	Land areas that are in close proximity to planned or existing related urban services such as retail or restaurants
6	Location on adequate primary roads
7	Areas which are located away (greater than 100 yards) from Critical Watershed Features

See pp. 76 - 81 of Plan

Furnace Run Watershed Plan

Priority Development / Redevelopment Areas



Executive Summary

Furnace Run

PAA

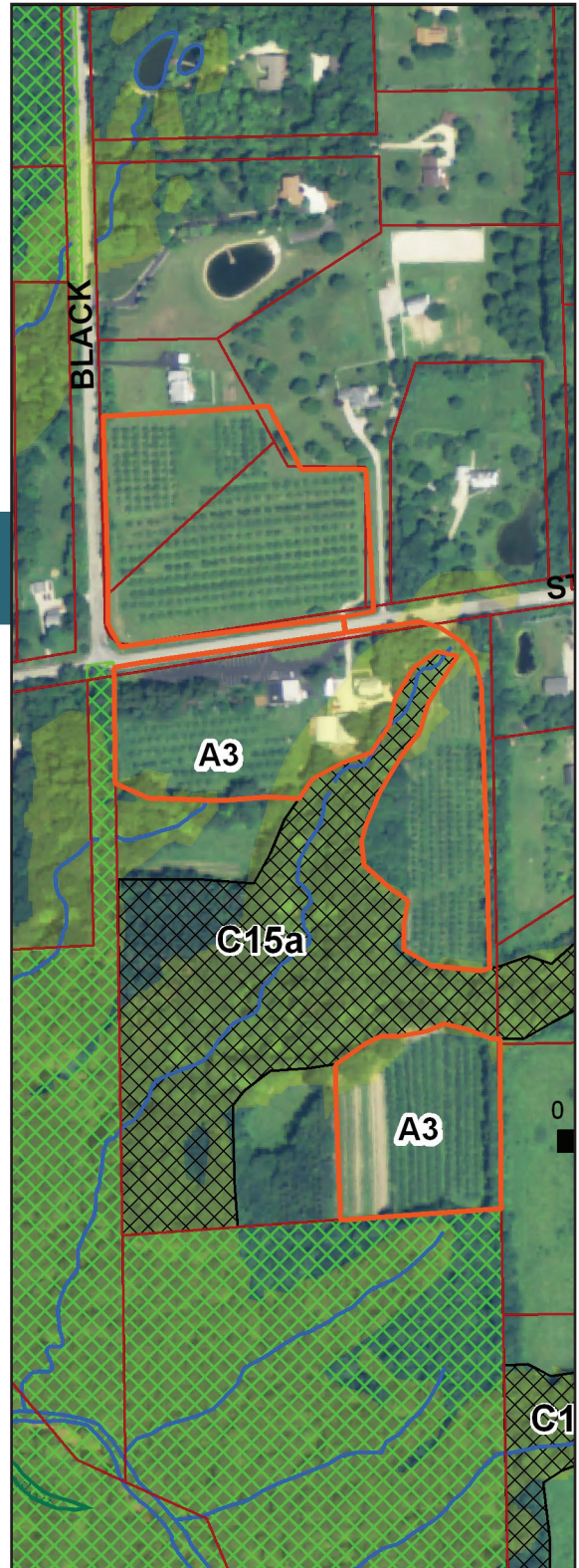
Priority Agricultural Areas

Priority Agricultural Areas are those with space, soil, topography, or other characteristics making the land or site specially conducive to highly productive agriculture or silviculture.

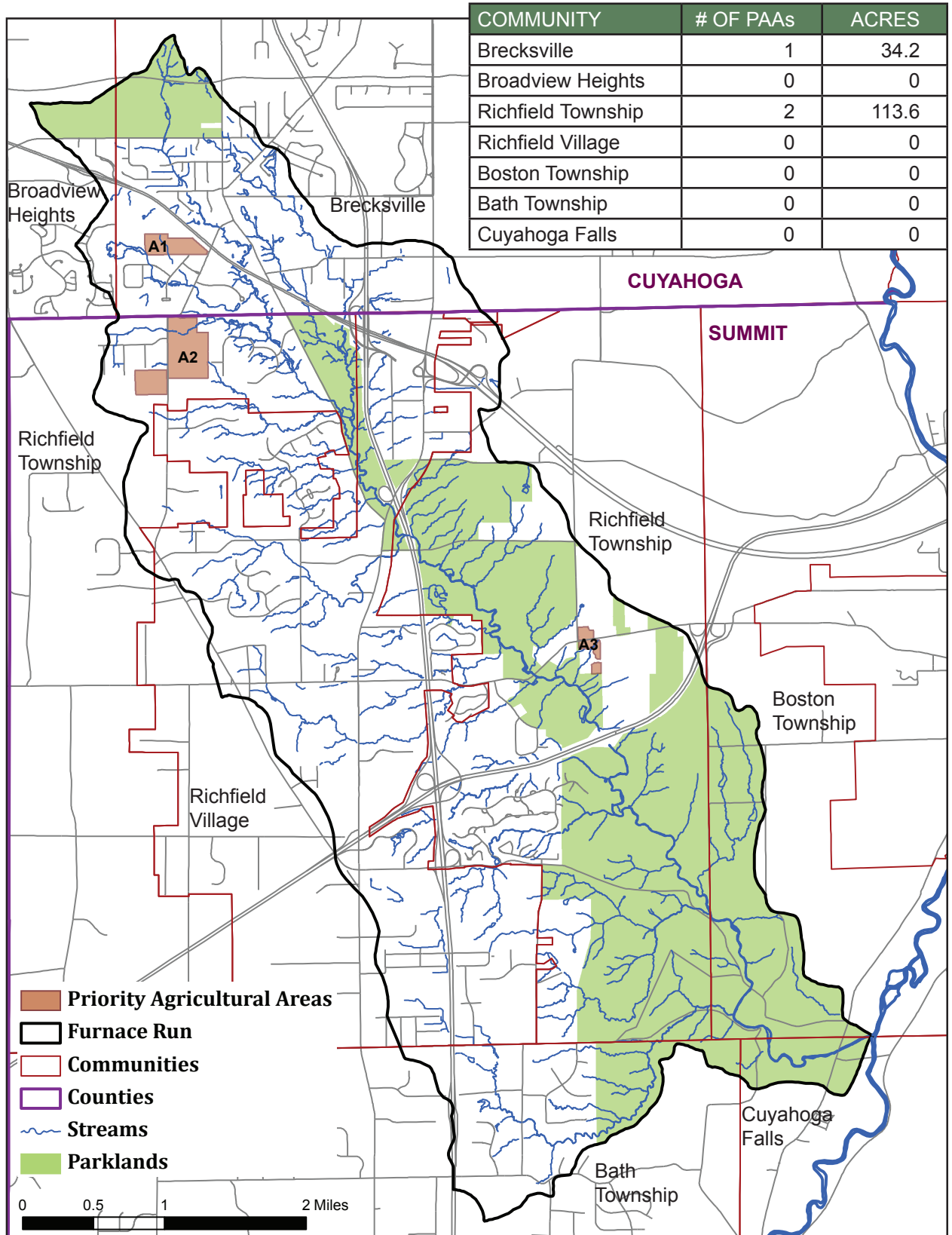
Criteria for determining Priority Agricultural Areas were based on the historic and current use of certain sites for agricultural purposes which have been highly regarded in the community.

CHARACTERISTICS of PRIORITY AGRICULTURAL AREAS in the FURNACE RUN WATERSHED

	Land that has been used historically for agriculture, whether currently in that use or available to return to such use
	Operating farms and agricultural operations with access to commercial routes
	Areas where growing operations with value to the Local Food movement may expand
	Potential for on-site marketing and/or processing of goods
	Relationship to existing or potential conservation easements



Priority Agricultural Areas



Executive Summary

Furnace Run Balanced Growth Plan

Proposed Plan Implementation Actions & Timetable

Preferred implementation tools

The Watershed Partnership members reviewed tools typically available for promoting watershed stewardship and implementing a Watershed Management Plan.

- Some tools are regulatory and restrict potentially damaging actions
- Others are proactive to promote or reward good stream stewardship
- Some tools are designed to help to inform the citizens about the watershed and their responsibilities to promote a watershed-friendly community culture
- Some tools directly target restoration actions of important stream features

These priorities were initially defined in March 2010 and revisited and refined by the WPP in 2011 as final plan implementation goals were set. The refined implementation priorities selected by the Partnership emphasize official recognition of critical watershed features in an official map, and cooperative protection of these features through setbacks, restoration strategies and incentives:

1. Develop and adopt map of defined critical watershed features that identifies non-structural distributed storm-water storage and watershed management areas – PCAs / PDAs / PAAs
2. Adopt and enforce a consistent suite of setback regulations to protect critical stream features
 - Steep slopes
 - Riparian corridors
 - Wetlands
 - Flood zones
 - Fragile & critical soils
3. Develop a forest protection and restoration management strategy and plan
4. Adopt and promote low-impact design and on-site water retention practices
5. Restrict and promote new economic development to existing urbanized areas as infill or redevelopment of underused sites
6. Maintain the watershed partnership to sustain ongoing and planned collaborative stewardship efforts
7. Develop incentives to promote desired behaviors including:
 - Minimize paving requirements and promote infiltration and filter strips
 - Promote conservation easements



Furnace Run Balanced Growth Plan

Proposed Plan Implementation Actions & Timetable

ITEM	PREFERRED TOOL	ACTION	PROPOSED COMPLETION
1	Develop and adopt map of defined critical watershed features that identifies non-structural distributed stormwater storage and watershed management areas – PCAs / PDAs / PAAs	1) WPP recommends adoption to local governments 2) Local government adoption	November 2011 December 2011
2	Adopt and enforce a consistent suite of setback regulations to protect the critical stream features a. Steep slopes b. Riparian corridors c. Wetlands* d. Flood zones - protect & eliminate encroachments e. Protect fragile & critical soils from erosion <i>* Review prioritized wetlands for possible mitigation and grant opportunities</i>	1) Joint ordinance review with subcommittee 2) Regular meetings of WPP, Planning Commission and BZA reps to promote watershed consistency in stream protection and enforcement 3) Seek RAP assistance	December 2011 Quarterly As needed
3	Develop forest protection and restoration management strategy and plan	WPP to participate in RAP Cuyahoga ReLEAF program	2011 - 2012
4	Adopt and promote low impact design and onsite water retention practices	1) Joint ordinance review 2) Regular meetings of WPP and local Planning Commissions and BZA reps	March 2012 Quarterly
5	Restrict greenfield development and promote new economic development in existing urbanized areas as infill, adaptive reuse or redevelopment of underused sites	1) Regular meetings of WPP, local Planning Commissions, BZA reps and Economic Development departments 2) Seek grants for economic development in PDAs with Ohio Lake Erie Commission assistance.	Quarterly As needed
6	Maintain Watershed Partnership to sustain ongoing and planned collaborative stewardship efforts	Recommend to local governments along with plan and map.	June 2011
7	Tax-based incentives, e.g. tax credits for land in PCAs/PAAs/PDAs	Participate in regional discussions	As scheduled
8	Defined measurable outcomes with ongoing monitoring and reporting and feedback loop	Annual Report to OLEC of actions taken - RAP assistance	June 2012

Notes

Item 2 – Wetlands, prioritized for importance to watershed plan goals, is included as an Appendix as part of the Plan report. These provide guidance to local communities for mitigation opportunities. Restoration Projects planned by Metroparks Serving Summit County and CVNP will be included in the suite of projects in order to facilitate eligibility for State incentives.

Item 3 – Forest priorities: RAP Cuyahoga ReLEAF project brochure is included in Appendices.

Major Issues to Manage in the Furnace Run Watershed

- 1) Steep, fast draining, high-energy stream with limited potential for storm water storage in which upstream and headwater urbanization adds discharge volume and energy.
- 2) The stream is the leading sediment producer to the Cuyahoga River where erosion and sediment are negatively impacting park resources. TMDL cites sediment and nutrients as leading stressors to the Cuyahoga River.
- 3) Community goals to preserve rural / small town atmosphere and preserve / enhance vital Green space in Riparian Corridors while also promoting quality economic development.
- 4) Highly desirable communities of the watershed are under steady development proposals especially in headwater and upstream locations near highway interchanges.
- 5) Close proximity to highway network and mid-location between Akron and Cleveland provide market opportunities for office parks and related infrastructure.
- 6) Underused and newly vacant employment centers provide excellent opportunities for Priority Re-development Areas and exploration of State economic development incentives with respect for the watershed.

Furnace Run Watershed Planning Principles

- 1) Shared responsibility to protect the stream resource
- 2) Mutual respect for up- and downstream neighbors
- 3) Cultivation of a watershed-friendly community culture
- 4) Promotion of and rewarding for good behavior
- 5) Followup with preservation and restoration actions

Strategies for Continuity

- 1) The Furnace Run Watershed Planning Partnership will continue to meet and support implementation of the Balanced Growth Plan among its communities.
- 2) The Partnership will review any proposed amendments to the Plan and make recommendations to the governing bodies before changes may be made by any individual community.
- 3) The Partnership's decision making will be done on a consensus basis among all partners.